Assessment of humoral immunity in workers occupationally exposed to low levels of ionizing radiation

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The aim of this study was investigating the effect of low levels of ionizing radiation on immunoglobulin, complement levels in radiology workers occupationally exposed to ionizing radiation.
The present study was conducted in the Department of immunology, college of medicine, Tabriz University of medical sciences, Iran. during the year of 2006-2007. Blood samples were taken from 45 radiology staff and from 35 subjects who had never been exposed to radiation. Samples were analyzed for immunoglobulin, complement levels.

Serum total IgA, IgM, c3, c4 levels were as significantly lower in the radiology workers exposed to ionizing radiation compared to the controls ($p<0.05$). A significant difference was observed in IgA, IgM levels and age in radiology workers ($p<0.05$). A statistical significant difference between IgA, IgM and c3 and working period was found in this study.

The present study suggests that exposure to low levels of ionizing radiation causes decreased IgA, IgM, c3, c4 levels in radiology workers. Further studies are needed for determining the appropriateness of periodic check-ups of immune functions for detecting early changes in the immune system.